

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence selected from the group consisting of:
 - (a) a polynucleotide fragment of SEQ ID NO:1 or a polynucleotide
5 fragment of the cDNA sequence included in ATCC Deposit No: XXXXXX, which is hybridizable to SEQ ID NO:1;
 - (b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:2 or a polypeptide fragment encoded by the cDNA sequence included in ATCC Deposit No: XXXXXX, which is hybridizable to SEQ ID NO:1;
 - 10 (c) a polynucleotide encoding a polypeptide domain of SEQ ID NO:2 or a polypeptide domain encoded by the cDNA sequence included in ATCC Deposit No: XXXXXX, which is hybridizable to SEQ ID NO:1;
 - (d) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:2 or a polypeptide epitope encoded by the cDNA sequence included in ATCC Deposit No:
15 XXXXXX, which is hybridizable to SEQ ID NO:1;
 - (e) a polynucleotide encoding a polypeptide of SEQ ID NO:2 or the cDNA sequence included in ATCC Deposit No: XXXXXX, which is hybridizable to SEQ ID NO:1, wherein said polypeptide is capable of binding to a G-protein upon exposure to nicotinic acid;
 - 20 (f) a polynucleotide which is a variant of SEQ ID NO:1;
 - (g) a polynucleotide which is an allelic variant of SEQ ID NO:1;
 - (h) an isolated polynucleotide comprising nucleotides 61 to 1218 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 387 of SEQ ID NO:2 minus the start methionine;
 - 25 (i) an isolated polynucleotide comprising nucleotides 58 to 1218 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 1 to 387 of SEQ ID NO:2 including the start methionine;
 - (j) an isolated polynucleotide encoding a polypeptide having at least 363 contiguous amino acids of SEQ ID NO:2, wherein said polypeptide is capable of
30 binding to a G-protein upon exposure to nicotinic acid;
 - (k) a polynucleotide which represents the complimentary sequence of any one of the polynucleotides specified in (a)-(i); and

(l) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(j), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.

5 2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment consists of a nucleotide sequence encoding a human G-protein coupled receptor.

 3. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

10 4. A recombinant host cell comprising the vector sequences of claim 3.

 5. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

 (a) a polypeptide fragment of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: XXXXXX;

15 (b) a polypeptide fragment of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: XXXXXX, wherein said polypeptide is capable of binding to a G-protein upon exposure to nicotinic acid;

 (c) a polypeptide domain of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: XXXXXX;

20 (d) a polypeptide epitope of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: XXXXXX;

 (e) a full length protein of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: XXXXXX;

 (f) a polypeptide comprising amino acids 2 to 387 of SEQ ID NO:2, 25 wherein said amino acids 2 to 387 comprising a polypeptide of SEQ ID NO:2 minus the start methionine;

 (g) a polypeptide comprising amino acids 1 to 387 of SEQ ID NO:2; and

 (h) a polypeptide comprising at least 363 contiguous amino acids of SEQ ID NO:2.

30 6. The isolated polypeptide of claim 5, wherein the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

7. An isolated antibody that binds specifically to the isolated polypeptide of claim 5.
8. A recombinant host cell that expresses the isolated polypeptide of claim 5.
- 5 9. A method of making an isolated polypeptide comprising:
- (a) culturing the recombinant host cell of claim 8 under conditions such that said polypeptide is expressed; and
- (b) recovering said polypeptide.
- 10 10. The polypeptide produced by claim 9.
11. A method for preventing, treating, or ameliorating a medical condition, comprising the step of administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 5, or a modulator thereof.
12. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
- 15 (a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and
- (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.
13. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
- 20 (a) determining the presence or amount of expression of the polypeptide of claim 5 in a sample; and
- (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.
- 25 14. An isolated nucleic acid molecule consisting of a polynucleotide having a nucleotide sequence selected from the group consisting of:
- (a) a polynucleotide encoding a polypeptide of SEQ ID NO:2;
- (b) an isolated polynucleotide consisting of nucleotides 61 to 1218 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 387 of SEQ ID NO:2 minus the start codon;
- 30

(c) an isolated polynucleotide consisting of nucleotides 58 to 1218 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 1 to 387 of SEQ ID NO:2 including the start codon;

5 (d) a polynucleotide encoding the HGPRBMY74 polypeptide encoded by the cDNA clone contained in ATCC Deposit No. XXXXX; and

(e) a polynucleotide which represents the complimentary sequence of SEQ ID NO:1.

10 15. The isolated nucleic acid molecule of claim 14, wherein the polynucleotide comprises a nucleotide sequence encoding a human G-protein coupled receptor.

16. A recombinant vector comprising the isolated nucleic acid molecule of claim 15.

17. A recombinant host cell comprising the recombinant vector of claim 16.

15 18. An isolated polypeptide consisting of an amino acid sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:2;

(b) a polypeptide domain of SEQ ID NO:2;

(c) a full length protein of SEQ ID NO:2;

20 (d) a polypeptide corresponding to amino acids 2 to 387 of SEQ ID NO:2, wherein said amino acids 2 to 387 consisting of a polypeptide of SEQ ID NO:2 minus the start methionine;

(e) a polypeptide corresponding to amino acids 1 to 387 of SEQ ID NO:2; and

25 (f) a polypeptide encoded by the cDNA contained in ATCC Deposit No. XXXXX.

30 19. The method of diagnosing a pathological condition of claim 13 wherein the condition is a member of the group consisting of: a disorder related to aberrant G-protein coupled signaling; a disorder related to aberrant Gi-protein coupled signaling; a disorder related to aberrant nicotinic acid dependent-Gi-protein coupled signaling; a disorder related to aberrant cell cycle regulation; cardiovascular disorders; an immune disorder; disorders associated with aberrant nicotinic acid utilization;

disorders associated with aberrant nicotinic acid absorption; disorders associated with aberrants in nicotinic acid responses; dyslipidemia; diabetic dyslipidemia; mixed dyslipidemia; hypercholesteremia; hypertriglyceridemia; type II diabetes mellitus; type I diabetes; insulin resistance; hyperlipidemia; obesity; anorexia nervosa; disease or disorders known to be associated with HM74; disease or disorders known to be associated with HM74A; heart failure; atherosclerosis; arteriosclerosis; hypertriglyceridemia; inflammatory disorders; arthritis; rheumatoid arthritis; osteoarthritis; prosthetic joint failure; gastrointestinal tract disorders; ulcerative colitis; Crohn's disease; inflammatory bowel disorder; gastritis; mucosal inflammation; enteropathy provoked by non-steroidal anti-inflammatory drugs; lung disorders; adult respiratory distress syndrome; asthma; cystic fibrosis; chronic obstructive pulmonary disease; myocarditis; multiple sclerosis; inflammation associated with diabetes melitus; glomerulonephritis; dermatitis; psoriasis; eczema; urticaria; burn injury; glaucoma; organ rejection; systemic lupus erythematosus; sepsis; ischaemic heart disease; disorders associated with aberrant lipolysis; stroke; dyslipidaemia; disorders associated with below average levels of HDL; disorders associated with above average levels of VLDL; disorders associated with above average levels of LDL; and disorders associated with above average levels of cholesterol.

20. The method for preventing, treating, or ameliorating a medical condition of claim 11, wherein the medical condition is selected from the group consisting of: a disorder related to aberrant G-protein coupled signaling; a disorder related to aberrant Gi-protein coupled signaling; a disorder related to aberrant nicotinic acid dependent-Gi-protein coupled signaling; a disorder related to aberrant cell cycle regulation; cardiovascular disorders; an immune disorder; disorders associated with aberrant nicotinic acid utilization; disorders associated with aberrant nicotinic acid absorption; disorders associated with aberrants in nicotinic acid responses; dyslipidemia; diabetic dyslipidemia; mixed dyslipidemia; hypercholesteremia; hypertriglyceridemia; type II diabetes mellitus; type I diabetes; insulin resistance; hyperlipidemia; obesity; anorexia nervosa; disease or disorders known to be associated with HM74; disease or disorders known to be associated with HM74A; heart failure; atherosclerosis; arteriosclerosis; hypertriglyceridemia;

inflammatory disorders; arthritis; rheumatoid arthritis; osteoarthritis; prosthetic joint failure; gastrointestinal tract disorders; ulcerative colitis; Crohn's disease; inflammatory bowel disorder; gastritis; mucosal inflammation; enteropathy provoked by non-steroidal anti-inflammatory drugs; lung disorders; adult respiratory distress
5 syndrome; asthma; cystic fibrosis; chronic obstructive pulmonary disease; myocarditis; multiple sclerosis; inflammation associated with diabetes melitus; glomerulonephritis; dermatitis; psoriasis; eczema; urticaria; burn injury; glaucoma; organ rejection; systemic lupus erythematosus; sepsis; ischaemic heart disease; disorders associated with aberrant lipolysis; stroke; dyslipidaemia; disorders
10 associated with below average levels of HDL; disorders associated with above average levels of VLDL; disorders associated with above average levels of LDL; and disorders associated with above average levels of cholesterol.